



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/580,432

02/07/2007

Remi Noirot

612.46212X00

2550

20457 7590 05/28/2009
ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER

TRAN, BINH Q

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

05/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,432	Applicant(s) NOIROT ET AL.	
	Examiner BINH Q. TRAN	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the amendment filed March 05, 2009.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Nieuwstadt et al. (Van Nieuwstadt) (Patent Number 6,988,361) in view of Sato et al. (Sato) (Patent Number 4,450,682).

Regarding claims 1, and 8-19, Van Nieuwstadt discloses a method and regenerating device for regenerating a particle filter (26) built into an exhaust line (Fig. 1) of an internal combustion engine (10), with the exhaust gases passing through the filter from an inflow face to an outflow face (Fig. 1), comprising the step of, during filter regeneration: the internal temperature (T1, T2) of at least two regions of the filter (12) is monitored (e.g. col. 4, lines 12-20); the oxygen level of the exhaust gases is reduced when at least one of the temperatures monitored is greater than a critical temperature (e.g. See col. 2, lines 52-62); and the oxygen level of the exhaust gases is increased to continue filter regeneration when all the temperatures monitored are less than the critical temperature (e.g. See col. 2, lines 52-62; col. 6, lines 20-67; col. 7, lines 1-67). However, Van Nieuwstadt fails to disclose wherein the step of monitoring the

Art Unit: 3748

internal temperature of at least two regions *within the filter between the inflow face and outflow face*.

Sato teaches a method for regenerating a particle filter (2) built into an exhaust line (Fig. 1) of an internal combustion engine (B), with the exhaust gases passing through the filter from an inflow face (41) to an outflow face (42) (Fig. 2), characterized in that, during filter regeneration: *the internal temperature (e.g. 17, 18, 19, 20) of at least two regions within the filter (2) between the inflow face and outflow face is monitored* (e.g. See col. 5, lines 50-67; col. 6, lines 1-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to monitor the internal temperature of at least two regions *within the filter between the inflow face and outflow face*, would have been obvious *inherently capable of performing the same functions* as to monitor the temperature upstream and downstream of the particulate filter, since it has been held that *rearranging parts of an invention involves only routine skill in the art*. In re Japikse, 86 USPQ 70.

In addition, it would have been recognized by one of ordinary skill in the art at the time the invention was made, that applying the known technique of using multiple temperature sensors to monitor the internal temperature of at least two regions within the filter between the inflow face and outflow face as taught by Sato to the exhaust purifying system of Van Nieuwstadt, would have yielded predicable results and resulted in an improved system for controlling the temperature of the particulate filter of an internal combustion engine more accurate, to further improve the performance of the engine and the efficiency of the emission system. In addition, the Van Nieuwstadt and Sato references are known work in one of field of endeavor, and such

Art Unit: 3748

modification is merely the use of known technique to improve a similar device by using multiple temperature sensors disposed within the filter between the inflow face and outflow face, and such modification, i.e. choosing from a finite number of predictable solutions, is not of innovation but of ordinary skill and common sense. (See “KSR Int’l Co. v. Teleflex Inc., 82 USPQ2d 1385 (U.S. 2007)”).

Regarding claim 2, Van Nieuwstadt further discloses the internal temperature of one region of filter (12) is monitored near its inflow face (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Regarding claim 3, Van Nieuwstadt further discloses that the internal temperature of one region of filter (12) is monitored near its outflow face (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Regarding claim 4, Van Nieuwstadt further discloses the internal temperature of a middle region of filter (12) is monitored (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Regarding claim 5, Van Nieuwstadt further discloses wherein desulfation of a NO_x trap (72) is performed, characterized in that the internal temperature of at least two regions of filter (12) is monitored after desulfation of trap (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Regarding claims 6, Van Nieuwstadt further discloses the oxygen level of the exhaust gases is reduced by operating the engine in rich mode (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Regarding claims 7, Van Nieuwstadt further discloses the oxygen level of the exhaust gases is increased by operating the engine in lean mode (e.g. See col. 7, lines 4-67; col. 8, lines 1-30).

Response to Arguments

Applicant's arguments filed May 22, 2008 have been fully considered but they are not completely persuasive. Claims 1-20 are pending.

Applicant's cooperation in explaining the claims subject matter more specific to overcome the claim rejection is appreciated.

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection as discussed above.

Allowable Subject Matter

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since allowable subject matter has been indicated, applicant is encouraged to submit **Final Formal Drawings (If Needed)** in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/BINH Q. TRAN/
Binh Q. Tran
Primary Examiner, Art Unit 3748
May 23, 2009